Pre-Assessment

Create a map in the Seeing Reason tool from Intel accessing the Water Studies project using the following:

Student Login

Teacher ID: [VPCostello@gmail.com](mailto:VPCostello@gmail.com)

Team ID: TeamXX where XX are numerals assigned by the teacher

Password: teamXX where XX are the same numerals as the Team ID.

Brainstorm all the ideas for the question within the “map box.”

Note: After each module students will update their maps. This will track the progress in their understanding of water as a resource.

Module 1 – 3 days

Essential Question

* Will your grandkids go thirsty in our watershed?

Module Questions

* How does water get here?

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Activities

Activity 1 Initial Hands on Exploration (hands on, engaging activity to stimulate inquiry)

|  |  |
| --- | --- |
| Create | Chalk sculpture |
| Name | Sculpture |
| Share | Sculpture with class |
| Rain | On sculpture |
| Journal/Wiki | What did you create? What did the “rain” do? Why do you think that happened? |
| Evaluate | Chalk Structure Wiki Posting Self Assessment |

Activity 2 Build Water Cycle Model

|  |  |
| --- | --- |
| View | Model Design |
| Build | Model |
| Discuss | Model with class |
| Improve | Model based on suggestions |
| Journal | What happened? |
| Evaluate | Build Water Model Group Task Assessment |

Note: Procedure and materials list is found in *The Stream Scene: Watersheds, Wildlife and People pages 13 through 14.*

Activity 3 Coast Fork Willamette Watershed

|  |  |
| --- | --- |
| Research | Watershed Criteria |
| Examine | Maps |
| Select | Drainages |
| Photograph | Drainages |
| Locate | Photographs with GPS |
| Create | Picture Story of Watershed |
| Evaluate | Watershed Photo Story Assessment |

Note: Background material and protocols taken from Watershed Dynamics.

Module 2 -5 days

Essential Question

* Will your grandkids go thirsty in our watershed?

Module Questions

* How much water do we use now? Will we use?

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Activities

Activity 1 Calculate personal/family water usage

|  |  |
| --- | --- |
| Input | Personal water usage data |
| Create | Data table to record water usage for overnight camping trip |
| Analyze | Compare home water usage to camping usage |
| Journal/Wiki | What is the percentage increase from camping to home water usage? |
| Evaluate | Percent Water Usage Assessment |

Note: home water usage calculator: <http://ga.water.usgs.gov/edu/sq3.html>

Go camping at Crater Lake National Park or Elliot Glacier on Mount Hood. (high interest; watershed visit)

Activity 2 Community Water Usage

|  |  |
| --- | --- |
| Research | Urban or CG Public Water Works |
| Research | Rural or OWRD Well Data |
| Research | City population and County or remaining population within watershed |
| Listen | Speaker on Water Rights |
| Calculate | Percentage of families in watershed using wells |
| Document | Post results to wiki |
| Evaluate | Total Water usage for Coast Fork Willamette watershed |

Note: first use of interactive, web based mapping tool found at <http://gis.wrd.state.or.us/apps/map/owrd_map/Default.aspx>

Additional resources: City of Cottage Grove or online archive of CG Sentinel and Lane County

Module 3 – 8 days

Essential Question

* Will your grandkids go thirsty in our watershed?

Module Questions

* Is our water source safe?

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Activity 1 Create a Water Filter (hands on, engaging activity to stimulate inquiry)

|  |  |
| --- | --- |
| Create | Water Filter |
| Share | Data to support model design |
| Journal/Wiki | Which filter worked best? How do you know?  What prior knowledge did you rely on? |
| Evaluate | Water Filter Collaboration Self Assessment |

Activity created by Vernier for Intel Essentials STEM course.

Activity 2 Water Quality Testing

|  |  |
| --- | --- |
| Practice | Protocols for pH, temperature, conductivity, DO |
| Demonstrate | Reproducible results |
| Research | Water quality index at Oregon DEQ website |
| Research | Drinking water quality using CG Consumer Confidence Report (CCR) |
| Identify | Macro invertebrates |
| Write | Persuasive essay: is our water safe or not? |
| Evaluate | Safe Water Essay rubric |

Module 4 – 8 days

Essential Question

* Will your grandkids go thirsty in our watershed?

Module Questions

* How have European Americans impacted the local water?

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Activity 1 Put it in Perspective

|  |  |
| --- | --- |
| Visit | Dam (CG or Dorena) |
| Update | US Corp of Engineer’s Interview Rubric |
| Research | Floodplains |
| Research | Black Butte Superfund Site (EPA) |
| Research | Salmon Habitat Loss |
| Journal/Wiki | What influence did the European settlers have on the Coast Fork Willamette watershed? and reply to three postings |

Activity 2 The Final Answer

|  |  |
| --- | --- |
| Feedback | Teacher Observation on Analysis Skills |
| Draft | Position Paper: Answer the Essential Question |
| Share | Draft |
| Revise | Position Paper |
| Share | Revised Copy |
| Polish | Position Paper |
| Share | Polished Copy |
| Final Edit | Position Paper |
| Publish | Email to teacher |

Or

|  |  |
| --- | --- |
| Feedback | Teacher Observation on Analysis Skills |
| Draft | Kennedy Sustainability Web Site – Water Project: Answer the Essential Question |
| Share | Draft |
| Revise | Kennedy Sustainability Web Site – Water Project |
| Share | Revised Copy |
| Polish | Kennedy Sustainability Web Site – Water Project |
| Share | Polished Copy |
| Final Edit | Kennedy Sustainability Web Site – Water Project |
| Publish | Email to teacher and Principal |